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CHOWDHURY, SUMAIYA A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/028,299

Applicant(s)

DIMITROVA ET AL.

Examiner

SUMAIYA A. CHOWDHURY

Art Unit

2421

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-13,17-20,24,25,29,30,33-38 and 41-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-13,17-20,24,25,29,30,33-38 and 41-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/20/09 have been fully considered but they are not persuasive.

(a) Applicant argues "...Alexander does not teach or suggest the claimed demultiplexer...Nothing in Alexander suggests that media content is in a format that requires demultiplexing, and thus Alexander does not mention separating out or demultiplexing data components of a common data signal, as is performed by a demultiplexer" on page 12, 2nd–3rd paragraph of the Remarks filed 5/20/09.

The Examiner is equating the demultiplexer in the claim to the indexing software in Alexander which breaks down the CNN program into themes such as International News, National News, Entertainment, etc.(col. 12, lines 10-44). The indexing software separates (demultiplexes) the CNN program (visual, audio, & multimedia content) into program segments (data components). The claim does not recite that the demultiplexer is used to transform the format of the signal as Applicant argues. Rather, the claim recites that the demultiplexer demultiplexes visual, audio, and multimedia content into data components. The Examiner is interpreting demultiplex to mean separate. The indexing software in Alexander does separate multimedia content into smaller length groups. The demultiplexer as claimed can broadly be interpreted as a hardware and/or software component which separates content which the indexing software in Alexander clearly does.

(b) Applicant argues with respect to claim 6 "...the Examiner asserts that Alexander discloses the aspect of a record of play sequences. However, Alexander does not disclose play sequences, let alone a record of play sequences...However, Vallone fails to overcome the deficiencies of Alexander with regard to the claimed record of play sequences" on pages 12-13 of the Remarks filed 5/20/09.

Claim 6 recites that "the facts derived from user behaviors include at least one record of play sequence commands, the play sequence commands including one or more of fast-forward, pause, replay, jump, select, and rewind commands." In col. 28, lines 30-52, Alexander teaches that each time the viewer interacts with the EPG or television, the EPG records the viewer's interactions in order to derive facts from the user behavior. For example, user interactions which are recorded include channel changes, volume changes, etc. However, Alexander fails to disclose wherein the viewer interactions include one or more of fast-forward, pause, replay, jump, select, and rewind commands. The Examiner introduced Vallone to teach that limitation. Vallone teaches while viewing a video, the user can interact with the video using one or more of fast-forward, pause, replay, jump, select, and rewind commands (Fig. 26; col. 19, lines 55-67). It would have been obvious to combine the two references to include widely used universal commands in order to gauge a better understanding of the user's preferences with respect to the multimedia content.

(c) Applicant argues with respect to claim 7 "An absence of user interaction is not determinative of user absence, as confirmed by the cited passage, which goes on to provide an example in which a user is deemed to be present and watching an advertisement if a channel change does not occur during the advertisement." on page 13, 2nd paragraph of the Remarks filed 5/20/09.

Claim 7 recites "the facts derived from user behaviors include at least one record of presence or absence of the user". The Examiner cited col. 28, lines 52-59, in Alexander which teaches that the EPG also records when there is an absence of interaction between the user and the television. For example, if the user leaves the TV on for a duration of time and steps away from the TV, an absence of interaction with the TV will occur which will be recorded as an absence of interaction by the system. The claim does not recite that the record includes a physical presence or absence of the user. The claim as presently recited is broad enough to read on this teaching in Alexander.

(d) Applicant argues with respect to claim 10 "The claimed automatic analysis of user behavior snapshots is different than the user analysis of snapshots associated with non-user entities as set forth in the cited references" on page 14, 2nd paragraph of the Remarks filed 5/20/09.

Claim 10 defines the snapshots as being indicative of user interests and analyzing the snapshots for adaptive memory tracking and evolution of the user. Arellano teaches data is gathered and analyzed from at least one user, and that

patterns and trends are detected from which a user model is generated. The Examiner equates the snapshot in the claim to the data gathered to form a user model described in Arellano. Arellano describes the user model as a representation of each user's preferences. The user model maintains some form of history that describes the relevant discourse of interaction that supports the user's preferences contained therein.

(e) Applicant argues "None of the cited references teach or suggest using play sequence commands to determine a level of user interest, let alone a record of play sequences" on page 14, 3rd paragraph of the Remarks filed 5/20/09.

Applicant is attacking the combination of the references individually. As discussed above, Alexander teaches analyzing user interaction commands to determine user preferences. Vallone teaches wherein user interaction commands include, play, rewind, fast-forward, etc. Alexander goes on to teach that based on the user interaction with the content, a level of user interest is calculated (col. 28, lines 30-52). For example, if a user watches plenty of sports games, the system generates data indicating that the level of interest in sports is high for the user.

(f) Applicant argues "Moreover, none of the cited references discloses assigning an interest level value to play sequence commands, let alone calculating a level of user interest as a function of the interest level values associated with recorded play sequence commands" on page 15, 1st paragraph of the Remarks filed 5/20/09.

As discussed above, Alexander teaches analyzing user interaction commands. Vallone teaches wherein user interaction commands include, play, rewind, fast-forward, etc. Alexander goes on to teach that based on the user interaction with the content, a level of user interest is calculated (col. 28, lines 30-52). For example, if a user watches plenty of sports games, the system generates data indicating that the level of interest in sports is high. Since the user selects to watch plenty of sports games, a level of user interest is generated indicating that the user likes sports games a lot since the user selects to view sports games often.

(g) Applicant argues "There is no suggestion in Thuraisingham that non-monotonic reasoning is superior, and thus, absent such a suggestion, it appears that the Examiner is using the present application as a blueprint to cobble together the subject rejections" on page 15, 3rd paragraph of the Remarks filed 5/20/09.

Applicant is arguing that which is not claimed. Nowhere does Applicant claim non-monotonic reasoning is superior, nor picking non-monotonic reasoning out of the list. At most, Applicant claims using modal non-monotonic to make deductions which Thuraisingham teaches. Thuraisingham teaches using modal logic to make deductions and to get new complete answers to queries.

(h) On page 11, in the status of the claims section, Applicant indicates that "Claim 54 does not stand rejected on art and is understood to contain allowable subject matter".

On page 12 In the Office Action, the Examiner had a typo by writing "As for claims 47-48 and 53-43", when the Examiner intended to write "As for claims 47-48 and 53-54". Since the subject matter of claim 54 is rejected in that section, and it is clear that it was a typo, claim 54 continues to be rejected. Secondly, in the Office Action Summary of the previous Office Action of 2/20/09, claim 54 is indicated as being rejected. Further, the Examiner did not include an "Allowable Subject Matter" section, so it is clear that no claims contained allowable subject matter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 3, 5, 7-8, 24, 29-30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander (6177931) in view of Thuraisingham (5481700).

Regarding claim 5 Alexander teaches a data processing system comprising:
a demultiplexer (indexing software) which demultiplexes (separates) at least visual, audio, and multimedia content into data components (The Examiner is equating the demultiplexer in the claim to the indexing software in Alexander which breaks down the CNN program into themes such as International News, National News, Entertainment,

etc.(col. 12, lines 10-44). The indexing software separates (demultiplexes) the CNN program (visual, audio, & multimedia content) into program segments (data components). The claim does not recite that the demultiplexer is used to transform the format of the signal as Applicant argues. Rather, the claim recites that the demultiplexer demultiplexes visual, audio, and multimedia content into data components. The Examiner is interpreting demultiplex to mean separate. The indexing software in Alexander does separate multimedia content into smaller length groups. The demultiplexer as claimed can broadly be interpreted as a hardware and/or software component which separates content which the indexing software in Alexander clearly does. col. 12, lines 17-44, col. 19, lines 5-12, col. 31, lines 40-48);

one or more content analyzer routines which analyze the data components to derive at least facts from the relevant user experience and behavior (col. 28, lines 30-67, col. 29, lines 22-67);

a store computer routine which stores at least the derived facts, user experience and behavior, other facts and information, and user inputs responsive to user queries into an adaptive memory with a hierarchy of linked index nodes, each node corresponding to subcategory of information (sports, basketball, teams; col. 29, line 30 - col. 30, line 15); and

a reasoning and fact reconciling computer routine which controls the adaptive memory to create at least one link to a content node and weak links to other index nodes, which weak links do not fit into the hierarchy (col. 29, line 30 - col. 30, line 15)

However, Alexander fails to teach modal logic is used to control the adaptive memory.

In an analogous art, Thuraisingham teaches modal logic is used to make deductions and gives new complete answers to queries – col. 56, line 62 - col. 57, line 60, col. 47, lines 43-62, col. 49, lines 10-67, col. 51, lines 12-15.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Alexander's invention to include the above mentioned limitation, as taught by Thuraisingham, for the advantage of having a machine automatically reason and draw inferences to come up with answers which are more accurate and more reliably ranked.

Regarding claim 2, Alexander discloses a name of at least one person who participated in creation of a relevant piece of content (identification number; col. 28, lines 22-29).

Regarding claim 3, Alexander teaches the facts derived from content comprise a summary (characterizations) of a relevant piece of content (col. 29, lines 30-67).

Regarding claims 7, Alexander teaches the facts derived from user behaviors include at least one record of presence of the user (col. 28, lines 52-59).

Regarding claim 8, Alexander teaches the facts derived from user behaviors include at least one record of queries (col. 28, lines 61-65, col. 31, lines 48-55).

Claims 29, and 30, contain the limitations of claims 5, 10, and 12 and are analyzed as previously discussed with respect to those claims. Claims 17 and 29 additionally call for the following:

An adaptive memory with weak links outside of the hierarchy (Alexander; teams the user is not a fan of; col. 29, line 55 – col. 30, line 10).

The play sequence commands are each assigned an interest level value; Calculating a user's interest in a particular content segment as a function of the interest level values of play sequence commands in the record.(Alexander inherently teaches assigning and calculating interest level values in order to recommend content to the user as discussed above in claim 12);

Regarding claim 33, they are analyzed and rejected similar to claim 9 above.

Regarding claim 24 it is analyzed and rejected similar to claim 7 above.

4. Claims 6, 17, 20, 45-46, and 49-52 rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander and Thuraisingham as applied to claim 5 above, and further in view of Vallone (6642939).

Regarding claim 6, Alexander discloses capturing at least one record of play sequence commands (user interaction; col. 28, lines 30-52), but fails to disclose wherein the play sequence commands including one or more of fast-forward, pause, replay, jump, select, and rewind commands.

In an analogous art, Vallone teaches while viewing a video, the user can interact with the video using one or more of fast-forward, pause, replay, jump, select, and rewind commands (Fig. 26; col. 19, lines 55-67).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Alexander and Thuraisingham's invention to include the above mentioned limitation, as taught by Vallone, for the advantage of including widely used general commands which would well depict a level of user interest.

Claim 17 contain the limitations of claims 5, 6, 10, and 12 and are analyzed as previously discussed with respect to those claims. Claims 17 and 29 additionally call for the following:

An adaptive memory with weak links outside of the hierarchy (Alexander; teams the user is not a fan of; col. 29, line 55 – col. 30, line 10).

The play sequence commands are each assigned an interest level value; Calculating a user's interest in a particular content segment as a function of the interest level values of play sequence commands in the record.(Alexander inherently teaches assigning and calculating interest level values in order to recommend content to the user as discussed above in claim 12);

Claim 20 is analyzed and rejected similar to claim 9 above.

As for claims 45-46, and 49-52, Alexander and Thuraisingham disclose a record of commands which illustrate a level of user interest. However they both fail to disclose the commands include fast forward, rewind, replay, and jump commands.

In an analogous art, Vallone teaches while viewing a video, the user can interact with the video using one or more of fast-forward, pause, replay, jump, select, and rewind commands (Fig. 26; col. 19, lines 55-67).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Alexander and Thuraisingham's invention to include the above mentioned limitation, as taught by Vallone, for the advantage of including widely used general commands which would depict a level of user interest well.

5. Claims 9, 25, 34, 36-38, and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander and Thuraisingham in view of Arellano.

As for claim 9, Alexander and Thuraisingham fail to teach wherein a snapshot acts as a bias toward a longer term view of user behavior.

In an analogous art, Arellano teaches at least one snapshot, which snapshot acts as a bias toward a longer term view of user behavior (par. 90, 737; par. 190, lines 8-12; par. 29, lines 7-10; par. 39, lines 30-33; par. 128; par. 18; in which snapshots

maintained for longer/continuing time period, for analyzing/finding future trends and patterns).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Alexander and Thuraisingham's invention to include the above mentioned limitation, as taught by Arellano, for the advantage of determining user preferences.

Regarding claim 25, it is analyzed and rejected similar to claim 9 above.

Regarding claims 34, 36 and 44, contain the limitations of claims 5, 10, 12, 17, and 25, and are analyzed as previously discussed with respect to those claims.

Regarding claim 37, Alexander teaches the operations further comprise capturing content summaries (EPG/characterizations) of the content experienced by the relevant user; and analyzing the captured content and content summaries and behaviors to create updated personal data; updating the adaptive memory with the updated personal data (col. 28-col. 29).

Claim 38 contains the limitations of claim 11 and is analyzed as previously discussed with respect to that claim.

Claim 41 contains the limitations of claim 12 and is analyzed as previously discussed with respect to that claim.

Claim 42 contains the limitations of claim 34 and is analyzed as previously discussed with respect to that claim.

Claim 43 contains the limitations of claim 10 and is analyzed as previously discussed with respect to that claim.

6. Claims 10-13, 35, 47-48 and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander, Thuraingham, and Arellano as applied to claim 10 above, and further in view of Vallone (6642939).

Claim 10 contains the limitations of claim 5, 6, and 9 and is analyzed as previously discussed with respect to those claims. Claim 10 additionally calls for the following:

capturing content experienced by a relevant user and the relevant user's behaviors; analyzing the content and behaviors to create updated content and behavior data; and updating the adaptive personal memory with updated data (Alexander; col. 28, line 12-col. 29, line 67);

analyzing play sequence commands (Alexander; col. 28, lines 30-52)

wherein analyzing the snapshots includes determining a level of interest in particular content (Claim 10 defines the snapshots as being indicative of user interests and analyzing the snapshots for adaptive memory tracking and evolution of the user. Arellano teaches data is gathered and analyzed from at least one user, and that patterns and trends are detected from which a user model is generated. The Examiner equates the snapshot in the claim to the data gathered to form a user model described in Arellano. Arellano describes the user model as a representation of each user's preferences. The user model maintains some form of history that describes the relevant discourse of interaction that supports the user's preferences contained therein. Arellano; par. 90, 737; par. 190, lines 8-12; par. 29, lines 7-10; par. 39, lines 30-33; par. 128; par. 18;)

Regarding claim 11, Alexander teaches the operations further comprise interfacing with the user and acquiring more data from the user (col. 31, lines 34-57, col. 29, lines 22-27).

Regarding claim 12, Alexander teaches interfacing further comprises one of recommending new content based on the adaptive personal memory (col. 31, lines 25-30).

Regarding claim 13, Arellano teaches determining a level of interest in a particular content (web page) responsive to one of what queries (web page request) were made (Arellano-par. 190).

Regarding claim 35 it is analyzed and rejected similar to claim 7 above.

As for claims 47-48 and 53-54, Alexander, Thuraisingham, and Arellano disclose a record of commands which illustrate a level of user interest. However they both fail to disclose the commands include fast forward, rewind, replay, and jump commands.

In an analogous art, Vallone discloses the commands include fast forward, rewind, replay, and jump commands. (Fig. 26; col. 19, lines 55-67).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Alexander, Thuraisingham, and Arellano's invention to include the above mentioned limitation, as taught by Vallone, for the advantage of including widely used general commands which would well depict a level of user interest.

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander, Thuraisingham, and Vallone as applied to claim 17 above and further in view of Sezan et al. (US 2005/0091686 A1).

Regarding claims 18, Alexander, Thuraisingham, and Vallone teach seeking (identifying) new content having content models in common with previously experienced (interacted) content (Alexander teaches recommending content based on previous interaction). However Alexander, Thuraisingham, and Vallone fail to specifically disclose a participant.

In an analogous art, Sezan teaches it is desirable to identify participants (e.g., directors, actors, etc.) in new content in common with previously watched content for searching and filtering out content of preferred by the user (par. 47, lines 1-7; par. 41, lines 3-10; par. 42, lines 21-35; par. 45, lines 20-27).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Alexander, Thuraisingham, and Vallone to include the limitation a participant as taught by Sezan for the advantage of increasing user convenience and satisfaction by identifying new content the user would like by enabling the user model/profiler to acknowledge the user's preferred actors, directors, etc.

Regarding claims 19, Alexander, Thuraisingham, and Vallone teach seeking (identifying) new content having content models in common with previously experienced (interacted) content. However Alexander, Thuraisingham, and Vallone fail to specifically disclose summary information.

In an analogous art, Sezan teaches it is desirable to identify summary (program profile, e.g., stars in the movie, rating, keywords, categories, etc.) information in new

content in common with previously watched content for searching and filter out content of preferred by the user (par. 47, lines 1-7; par. 41, lines 3-10; par. 42, lines 21-35; par. 45, lines 20-27).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the system of Alexander, Thuraisingham, and Vallone to include the limitation summary information as taught by Sezan for the advantage of increasing user convenience and satisfaction by identifying new content the user would like by enabling the user model/profiler to acknowledge the user's preferred content profiles.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUMAIYA A. CHOWDHURY whose telephone number is (571)272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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